# THE MARINE RECORD.

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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### AIDS TO NAVIGATION.

The committee of the Lake Carriers' Association, consisting of Capt. George P. McKay, Capt. William S. Mack, Harvey D. Goulder, counsel, and Secretary C. H. Keep which left Cleveland last Saturday for Washington to urge the incorporation in the forthcoming report of the light-house board of certain recommendations for new lights, had a hearing before that body on Monday.

The committee showed the danger to shipping at various points along the lakes and explained the necessity of the lights and signals asked for.

Naval Secretary Wild, of the light-house board, said that he considered the requests reasonable and believed that the board would be perfectly willing to make the desired recommendations to the secretary of the treasury.

The request of Mr. Keep that the buoys in the rivers should not be removed until later in the season than has heretofore been the custom, as vessels are now engaged in the navigation of the lakes up to a much later date than formerly. The pertenency of the subject was candidly admitted by the naval secretary and he replied by stating that he would notify the various district officers not to remove the buoys until after December 10.

The members of the committee were much pleased with their courteous treatment and the consideration given to their requests. Following are the aids asked for: Three lights at Grassy Island; one light and fog signal at Middle Island, Lake Huron; a fog signal at Cat Head point; light and fog signal at southeast point of North Manitou Island; range lights at Death's Door, south end of Green Bay; light at Poverty Passage, Green Bay; lightship at Lansing Shoal, north of Squaw Island; range light at Grand Marias, Lake Superior; light-house and fog signal at Crip's Point, Lake Superior; fog signal in Eagle Harbor, Lake Superior.

### MEDALS FOR SAVING LIFE RESTRICTED.

The United States Attorney-General has rendered an opinion in which he holds that under section 12 of the act of June 18, 1878, the secretary of the treasury is not authorized to confer medals for signal exertions in saving persons from drowing in small inland streams, ponds, pools, etc. The waters contemplated by the act are held to be either the high seas or waters belonging to the United States or over which it has jurisdiction by virtue of its authority to regulate interstate commerce.

### ORE SHIPMENTS.

Lake Superior ore shipments now approximate 6,400,000 tons, or over 400,000 tons more than the shipments for 1893. On the different ranges the Gogebic is getting near the end, and most of the mines are well along towards the end of their stock piles. At the big mines there is effort to begin on the work of preparing the mines for next season.

It is reported that there are nearly 2,000,000 tons less unsold ore at Lake Erie ports than there was a year ago, a fact that is having a very decided effect on the price of ore, which is moving upward. It indicates, too, that there has been more ore consumption than the general public is aware of.

### A WATERWAY TO THE COAST.

The Toronto Board of Trade held a special meeting on Monday to consider the deep waterways question and the advisability of adopting the platform of and affiliation with the Deep Waterways convention. John Brown, of the Citizens' Milling Co., put the question in definite form by moving that the board adopt the convention platform *en bloc*. Ex-President Blain strongly opposed the resolution and protested that it was most unwise to ask the government to spend many millions in deepening the Welland Canal only to have produce carried past Toronto. He argued that a demand on the government for an impossible concession would retard rather than promote the opening of much needed waterways. Mr. Brown's resolution obtained only seven votes. A resolution was adopted calling for a 14-foot channel from the lakes to the ocean by the St. Lawrence route.

### INTERNATIONAL FISHERY COMMISSION.

Two years ago an agreement was reached between Canada and the United States for the conduct of an investigation of all the fisheries in the waters between or contiguous to these two countries, looking, if possible, toward the establishment of uniform methods of regulation for the proper protection of the several fisheries in those waters. The conduct of this work was assigned on the part of the United States to the fish commission, and on the part of Canada to the department of marine and fisheries, a representative being designated on the part of each country to take charge of and report on the inquiry. For the United States Mr. Richard Rathbun, of the fish commission, was selected, and for Canada, Dr. Wm. Wakeham. The waters covered by this agreement include everything falling within the scope mentioned, from the Atlantic to the Pacific, and also the oceanic waters on both sides near the boundary line, or resorted to by the fishermen of both countries, conjointly.

The investigation was first taken up in May, 1893, and during the first season the ground covered was the mackerel fisheries on the Atlantic coast, the St. Croix and St. John Rivers between Maine and New Brunswick, including the salt waters in the vicinity of the Bay of Funday, the St. Lawrence River and the northern shores of Lakes Ontario and Erie. This year the mackerel investigations have been continued by parties along the seacoast, but the main part of the investigation of this joint commission has been confined to the system of the Great Lakes. The party has just completed its field of labors and is now compiling the results of the investigation. A very large amount of material has been collected, which will require some time for reduction and the reaching of conclusions. It is hoped that the results of the investigation will give a very fair idea of the present condition and scope of the fisheries, will show their development, and will indicate such regulations as may be necessary for their improvements, either by legislative action or by means of fish culture.

One of the most interesting features brought out by the inquiry this summer is the rapid development of fisheries in the Lake of the Woods, all of which have been built up within the past three or four years. During last spring 140 nets were being fished in that lake, and it is now probably the principal source of the sturgeon supply from fresh water in the United States.

### SECRETARY OF THE LIGHT-HOUSE BOARD.

Capt. John Millis, corps of engineers, U. S. Army, stationed at New Orleans, has been ordered to report to the secretary of the treasury at Washington for assignment to duty as engineer secretary of the light-house board.

### OWNERS VERSUS UNDERWRITERS.

The case of the Richelieu & Ontario Navigation Co. v. The Insurance Companies, which was dealt with in our issue of the 4th inst., has not yet been finally settled, as it now appears that the case is to be carried to the privy council for final decision.

# NEWS AROUND THE LAKES.

## CHICAGO, ILL.

*Special Correspondence to The Marine Record.*

Elphicke & Co. chartered the steamer Escanaba for wheat to Milwaukee at ¾ of a cent, free in and out.

P. H. Fleming & Co. chartered the steamer City of Berlin for 120,000 bushels of barley to Buffalo at 1 cent.

Capt. John McCormick left here last Thursday night for Buffalo to bring up the new revenue cutter Calumet to this port.

J. G. Keith & Co. chartered the steamer Mary A. McGregor for lumber from Two Harbors, Lake Superior, to Chicago at $2.50 per thousand.

Palmer, Cook & Calbick chartered the schooner W. P. Ketcham for oats to Midland at 1 cent; the barge George B. Owen for corn to Midland at 1¼ cents; the steamer New Orleans for corn to Buffalo at 1 cent.

The passenger steamer Soo City, which has been running to Michigan City the past two seasons, has been taken off that route permanently. She will probably run between Chicago and Holland next season.

The schooner F. L. Danforth was sold Friday by Patrick Finn to John Thomas Conlon, of Thorold, Ont.; consideration, $12,500. Conlon is owner of the steamer Erin, which has towed the Danforth this season.

The steamer Monteagle, coal laden, went aground Saturday in the draw of the St. Paul railroad bridge, near Clybourne Avenue. She was released Sunday afternoon after lightering considerable of her cargo.

The fireboat Yosemite was brought down from the shipyard Sunday and placed at her station at the foot of La Salle street. The repairs on her are nearly completed. She has undergone a thorough overhauling and is now as good as new.

The stocks of grain in Chicago elevators last Saturday evening were 25,316,000 bushels of wheat, 1,525,000 bushels of corn, 1,402,000 bushels of oats, 168,000 bushels of rye and 66,000 bushels of barley. Total, 28,477,000 bushels of all kinds of grain, against 23,195,000 bushels a year ago.

John Keenan, a deck hand on the Anchor Line steamer Alaska, was taken sick on the way up from Buffalo and died on Saturday. His body was put ashore at Milwaukee for burial. He was about 35 years old, of dark complexion and had black hair and mustache. He is supposed to belong to Batavia, N. Y.

Owing to some misunderstanding about the condition of her cargo of wheat, the steamer Chas. A. Eddy sailed Saturday night with 57,000 bushels. Her manager, Capt. John Shaw, taking into consideration the low rate of freight now prevailing, preferred to go short of full cargo to laying over till Monday. The steamer was properly billed, the daily papers to the contrary notwithstanding.

The steamer H. W. Williams, of the Williams Transportation Co., is having her engine taken out at South Haven. She is to receive a new fore and aft compound engine, 18 and 36 by 30, built by the Montague Iron Works, of Montague, Mich. Her boiler will be placed nine feet forward to lighten her up aft, and her passenger gangway will be remodeled and made similar to that on the company's steamer City of Kalamazoo. The steamers Lorain L. and Glenn will receive new steeple compound engines, also to be built by the Montague Iron Works.

## BUFFALO, N. Y.

*Special Correspondence to The Marine Record.*

The schooner Jupiter was libeled this week for wages due the cook.

The tug Frank Edwards has been libeled at Grand Haven to satisfy a claim of $600 for fuel.

Coal shipments for the past week considerably increased over previous shipments, the amount being 78,200 tons.

Quite a jag of Canadian wheat has arrived here this week; four steamers discharged 276,685 bushels consigned to London via. Boston.

About 60,000 tons of coal is the weekly average of shipments from this port. Last week the clearances showed upwards of 76,000 tons.

Lieut. Dennet, U. S. R. M., expects to leave Buffalo to-day (Wednesday), with the revenue cutter Calumet, built and engined by the Bell Steam Engine Works, of this port. It is almost certain that the Calumet will touch at Cleveland on her way up the lake.

During a fog on Saturday the steamer Alva went ashore on Seneca Shoal, about nine miles from this port. She was released next day. The previous stranding on this shoal of the steamer Fred Pabst was the cause of her lightering about 12,000 bushels of grain before the tugs could release her.

Justice Ward, of the Supreme Court, handed down an order on Tuesday, dissolving the Buffalo & Niagara River Navigation Co. The stockholders made an application for the voluntary dissolution of the company. The liabilities amount to $107,570.24 and the assets $22,-722. The Buffalo Loan, Trust & Safe Deposit Co. was appointed permanent receiver.

Capt. E. E. Chapman, superintendent of the Ninth district of the United States Life Saving Service, has returned to this port after the periodical tour of inspection of the stations on Lake Ontario. He visited Big Sandy, Oswego, and Charlotte stations, where the crews were specially drilled. Everything was found in good running order and discipline was strictly maintained. The work of the crews during the severe storms of last week was highly commendable, and as much can be said for several of the stations in other lake districts.

The steamer Alva grounded on Seneca Shoal on Saturday night, eight miles up the south shore. She was fortunate in coming off undamaged, though it took four tugs to release her. It was foggy when the steamer went on, and the shoal seems to be out of the range of the foghorn. The steamer Pabst, which was the last boat to strike there, had to lighter much of her cargo before being released. Capt. Dan McLeod conducted the survey on the Alva and her repairs will amount to about $1,600.

Again is a good sized kick registered against the practice of clearing at Tonawanda and calling at Buffalo to load coal with entering or clearing at the custom house. The lakes have been twitted enough about unreliable statistics of commerce being furnished on all sides and much of this is due to just such lax regulations as the foregoing which occurred this week. Another Calumet and boarding officer ought to be placed here so that it might at least be known what tonnage used the port.

The Bell Steam Engine Works have shipped this week to their New York agents one of their speed bronze propeller wheels to be fitted on a steamer at Panama. They have also shipped a steam hammer to New York for export, and in the course of a few days a 9 by 10 marine engine ordered for a twin screw boat now building at Fenton, Mich., will be shipped. It is learned at the works that orders and inquiries for new work is coming in daily, but they are still open for contracts for quick execution. The Bell steam hammers are a specialty of the works.

## DETROIT, MICH.

*Special Correspondence to The Marine Record.*

The schooner S. V. R. Watson has been chartered this week Duluth to Detroit, with wheat, at 2½ cents. The Buffalo rate is now quoted at 2¾ cents.

The W. F. Sauber, owned and managed by the Mitchell Transportation Co., of Cleveland, will receive a new propeller wheel here on her next up trip.

The U. S. steamer Michigan has been dry docked at Springwell's to sight her bottom and to give her any necessary repairs that may be required prior to her laying up for the winter.

Fog has somewhat delayed the D. & C. Line boats this week, but as the safety of passengers is one of the principal features in the management of this Line, no objection is or can be taken to a few hours delay at this season of the year.

Capt. Harris Baker, of this port, has taken the contract to raise the cargo of steel billets sunk in the schooner Alva Bradley. Baker has been successful in several wrecking expeditions after others had given up the jobs and he has a name for getting whatever he goes after, so that, with a fair slant of weather, it is almost certain that the greater part of the foundered schooner's cargo will be recovered.

The Grummond Tug and Wrecking Line accomplished excellent work in releasing the stranded steamer George L. Colwell and her consort, the B. P. Dobbins, ashore at Deer Park, Lake Superior, and about given up as total losses. The contract closed by the Grummond Line called for a certain sum in the event of the expedition being successful, otherwise no recompense, and it speaks highly for the judgment of manager U. Grant Grummond, to have carried out the work with such good dispatch. Both vessels are now on their way down to Detroit, leaking badly of course, but with powerful pumps on board. The Swain and Crusader were the boats engaged in the wrecking operations.

Capt. John Byrne, of the steamer Owego, appeared before Commissioner Graves, a few days ago, to answer to a charge of dumping ashes into the St. Clair Flats canal. Capt. Mott, in charge of the waterway, alleges that Capt. Byrne commenced throwing ashes overboard while passing through the canal, and would not desist even when ordered to do so. Capt. Byrne, however, says that only one shovelful was tossed over, and that by a fireman who knew no better. The hearing was set for November 2. The penalty is a fine of $5,000, one year in the house of correction, either or both, in the discretion of the court. The facts are no doubt as Capt. Byrne represented them, and the object of the state has been carried out by simply calling the attention of vessels to the fact that ashes or refuse may not be thrown overboard in a canal, channel or fairway.

Charles Cardinal, one of the crew of the steamer George L. Colwell, which went ashore last week at Deer Park, Lake Superior, made affidavit at Sault Ste Marie, making serious charges against Capt. A. C. Smith. Cardinal is not specific in his complaints, but presumes the captain's handling of the boat was unseamanlike and not for the best interest of the owner and crew. The crew arrived Monday morning and, after calling at the owner's office and settling, were perfectly satisfied. Mr. Farwell, on receiving word of the complaints of the men a few days ago, wired his legal representative to send the men down and draw on him for the amount of the bill, $108. On their arrival Mr. Farwell paid the men five days wages and their board since the Colwell and Dobbins were stranded, although he was bound legally only until the time of the wreck. It looks a good deal like as if Cardinal was one of the old type of sea lawyers who could always advise the master of a vessel in emergencies, only the advice was usually given *sotto voce* in the forecastle. Well advised criticism is all right enough but Lord save us from the modern Dick Deadeye a la Pinafore.

## CLEVELAND, O.

*Special Correspondence to The Marine Record.*

Capt. William Lund has again taken charge of the steamer Fred Pabst.

The steel steamer Samuel Mitchell is undergoing some minor repairs at the yards of the Globe Iron Works Co.

The Anchor Line has chartered the steamer I. W. Nicholas, of the Minch Transit Line, for two trips with flour from Duluth to Buffalo.

The schooner H. A. Hawgood has been in the Cleveland dry dock nearly all the week undergoing a thorough overhaul. About $5,000 has been put on her.

Capt. Thos. Wilson and Mr. George Quayle have enjoyed a few days' duck shooting at St. Clair Flats this week. They are expected to return home to-day.

Mr. Robert Logan, manager of the Lake Department of the American Lloyds, left this port Wednesday on a tour to Canadian ports in the interests of the ship classification society, which he represents.

Capt. C. E. Benham, for the owners, and Capt. Dan McLeod for the underwriters, completed a survey of the damages received by the steamer St. Paul. It is estimated that it will cost about $2,000 to make repairs.

A contract for the recovery and delivery of the steel billets which composed the cargo of the wrecked schooner Alva Bradley was let this week. Three different parties submitted propositions for the work. The entire cargo is worth about $20,000.

Capts. Dan McLeod and C. E. Benham held a survey at Ashtabula, Wednesday, on the schooner Charles N. Ryan. Capt. McLeod also surveyed the steamer Alva at Buffalo after she had been released from Seneca Shoal. About $2,000 will cover the Alva's damages.

The last freight steamer built by the Globe Iron Works Co., and named the Globe, cleared from Lorain this week for Duluth with 3,000 tons of coal. Considering the shoal water at the "Soo," say 14 feet, 7 inches, this is a phenomenal cargo on so light a draft.

The special committees of the council and chamber of commerce went up the river on a tug Tuesday afternoon for a trip to determine on plans for the improvement of the waterway. They took with them a large map that had been prepared by the city engineer, which indicated the old established dock lines and the new lines proposed

for the improvement. The members endeavored to thoroughly familiarize themselves with the trend of the river, so as to intelligently prepare a report recommending a plan of improvement.

The Transport, a former carry ferry steamer recently purchased by Mr. John Corrigan has undergone a thorough overhauling at the yards of the Cleveland Dry Dock Co. and been inspected by Capt. Dan. McLeod. She will trade between the Islands, Lorain and this port.

Ashtabula Harbor does not need a breakwater to protect the Lake Shore railroad as much as it does a good wrecking outfit to be stationed there for cases of emergency. Perhaps the Lake Shore railroad might remove the inner pier further back so as to enlarge the approach as it promised to do when the outer portion was moved back to widen the harbor.

After all the talk over the question Capt. John Shaw seems to have acted with circumspection in clearing the Charles Eddy from Chicago with part cargo. The wheat which was shipped supposed to be weevily is now pronounced sound and the vessel ordered to Buffalo to discharge her cargo. The Eddy got dispatch and that is what Capt. Shaw is always after.

Col. Jared A. Smith, corps of engineers U. S. Army, is having the bar cleared away at Fairport, repairing the piers at Ashtabula and Conneaut, and dredging work is also being carried on at Toledo and Sandusky.

Both docks of the Ship Owners' Dry Dock Co. are now engaged; the steamer St. Paul being in one and the large schooner Tasmania in the other.

Among the gentlemen from other ports attending the Swain trial last week were Capt. Orr, Capt. James Davidson, Capt. Galvin, Capt. Herriman and Mr. C. B. Calder, superintendent of the Detroit Dry Dock engine works. C. E. Kremer, Esq., proctor in admiralty, represented the underwriters and Harvey D. Goulder, Esq., of this port, the vessel owner.

There is little doubt but that November 1st will see a good many of the smaller class of steamers, as well as schooners and barges, laid up for the winter. The insurance rebate for the month of November is about as much as the vessels would clear if kept at work on going rates of freight; besides, it takes more to sail a vessel in hard weather than it does in fine weather.

The lumber barge Lone Star was offered at marshal's sale on Tuesday afternoon, but as there was only a fifty dollar bid made, the sale was postponed till next Saturday. The barge is now lying in the old river bed and appears to be worth a few hundred dollars. The claims against her are numerous, Capt. Dahlke, of the tug Warswick, having a salvage claim of nearly $300 on her.

During the visit of Mr. Geo. L. McCurdy, manager of the lake department of the Insurance Co. of North America, to this port, last week, he met many of his warm friends in vessel and insurance circles. As a lake underwriter Mr. McCurdy stands high in the estimation of vessel owners for his business-like methods, probity, and liberal indemnification in all damage cases where vessels are concerned.

The passenger steamer State of New York is at the yards of the Cleveland Ship Building Co. for some repairs and new work; otherwise the yards are quiet, as there is nothing on the stocks. The engine and boiler shop departments of these extensive works are fairly busy on a large contract for stationary purposes, and, with the usual amount of repair and local work, a large staff of skilled labor finds steady employment.

The Cleveland & Buffalo Transit Co. have taken the steamer State of New York out of commission and until the close of navigation will run the steamer State of Ohio from Cleveland on Mondays, Wednesdays and Fridays at 6:15 p. m., central time, and from Buffalo Tuesdays, Thursdays and Saturdays at 7:15 eastern time. The passenger fare has been reduced to $2.00 between Cleveland and Buffalo until the close of navigation.

Some conversation was carried on in an owner's office the other day relative to a vessel holding cargo for demurrage charges. Porter, in his "Law of Bills of Lading," says that when the bill of lading contains no stipulation as to demurrage, the common law courts have usually held that the consignee or his assignee is not liable for demurrage, although they have accepted the goods. This is a question that would stand looking into where the claims are small in amount and not easily settled.

The new fireboat John H. Farley arrived in the port of Cleveland Saturday. On board the steamer were Director Hyman, Chief Dickinson, Dr. Leick and Messrs. Spencer and Towson. The fireboat was towed to the fire company's docks at the foot of Superior street and left there. The machinery will soon be put in.

Lieutenant George P. Blow, U. S. N., who established the Hydrographic Office at this port, was ordered to return to Chicago on Saturday, having accomplished his mission. He left many warm friends who had learned to esteem him because of his cordial manners and agreeable personality. Ensign W. C. Cole, U. S. N., has been detailed from San Francisco to be in permanent charge of the office.

## CANADA'S METEOROLOGICAL OFFICER.

Prof. Carpmael left Canada early in the year to recuperate his health in the south of France. News of his death has just been received, and Mr. F. R. Stupart will in all probability be promoted to the position of director of the meteorological service, in succession to Prof. Carpmael. Mr. Stupart has been director of the observatory and of the meteorological service since the late professor's departure.

Prof. Carpmael, M. A., F. R., S. C., F. R. A. S., had been for eighteen years director of the observatory at Ottawa, having received his appointment in 1876, and attended to his duties until forced to leave his post through ill health. He won a wide distinction in his own sphere. He was a member of the British eclipse expedition to Spain in 1870, and had traveled in many countries previous to taking up his residence in Canada.

## IRON ORE MINING IN OHIO.

The nineteenth annual report of the chief inspector of mines for the State of Ohio, among other interesting and valuable information, has a summary of the production of iron ore in that state during the year of 1893. The returns for 1893 show a decrease of 21,462 tons as compared with the year 1892. The total tonnage was 68,220 tons. The decrease in production has been continuous since 1887. During that year the greatest tonnage of which the State has record, 377,465 tons, was reported, but during the past three years it has fallen below the hundred thousand trade mark. This falling off is attributable to several causes. Among these are stated the changes in the iron market by which a demand has arisen for grades of iron to which the Ohio ores were not adapted. Again, the margin of profit in pig iron during recent years has induced furnacemen to rebuild their fureaces, increasing their size and capacity, and thus enabling them, by the use of the richer ores, to treble the production of former years. Another cause mentioned, and it certainly is not without its weight, is the continued development of rich iron ore beds in the Northwest, the character of the deposits being such that with the use of new and improved machinery they are able to mine at a trifling cost compared with earlier developments. Lake vessels carrying coal to such ports on their return trips to the lower lake ports carry iron ore at such low rates as to enable furnacemen to supply their wants at a rate which precludes the Ohio miner from making living wages.

## THE BEST COURSE TO TAKE.

BUFFALO, N. Y., Oct. 20, 1894.

*To the Editor of The Marine Record:*

I have received a request from Gen. O. M. Poe, United States engineer in charge of the improvements now going on at the foot of Lake Huron, asking that vessels shall pass between the two dredges now at work there. At present vessels pass between the red dredge and the light-ship. There is only 200 or 300 feet between them, and this course is not only dangerous to the passing vessels, but an obstruction to the work. There is a space of 1,600 feet between the two dredges where vessels may safely pass.

I am requested by Gen. Poe to bring these facts to the notice of vessel masters. Will you kindly insert his request?

Yours truly,

C. H. KEEP,

Secretary Lake Carriers' Association

## IN SEVEN FATHOMS.

An amusing story comes from Milwaukee this week wherein an old-time "flat foot" holds to the seven fathom theory, that there is no Sunday or national jurisdiction need be observed when he has a streak of clear water under him to the depth indicated.

It appears that a scow was libeled for $70 unpaid wages, and the U. S. Marshal proceeded, with all due majesty of law, to clap a writ on the mainmast of the vessel, then anchored behind the breakwater at Milwaukee. On boarding, the skipper of the craft gravely informed the marshal that he had no authority to make the levy as the vessel was lying in seven fathoms of water. This staggered the representative of Uncle Sam, who is as yet a novice in the business, and he caused soundings to be taken. These showed a depth of only a trifle over four fathoms and he so informed the captain of the scow. The skipper maintained his bluff, however, and he solemnly informed the deputy marshal that he had no authority to make a seizure on the high seas even if the water did not exceed three fathoms in depth. This last claim rendered the marshal so uncertain of his position that he returned to the harbor for enlightenment and instruction. When he went back to the scow he found that every link of cable had been paid out and helping themselves to the "main tops'l" the crew had cleared out in a yawl boat. The anchor was got after a few hours' work and the scow towed to moorings in the harbor, where she is now held subject to the libel suit.

## ITEMS FROM THE LOG BOOK.

The schooner Alice B. Norris has been ordered to Lorain to go into winter quarters.

The bar in Erie harbor has been dredged out, and there is now eighteen feet of water in the shallowest place.

David Dake, of Charlevoix, has purchased the schooner Anna P. Grover from Homer Durand, of Toledo.

G. H. Breyman & Bros., of Toledo, have bought the tug Joseph Goldsmith from Reynolds & Co., of Sturgeon Bay, for $6,000.

The week's shipments from Duluth were: Wheat, 1,600,009 bushels; ore, 40,000 tons; flour, 200,000 barrels; lumber, 7,500,000 feet.

Shipments from Ashland, Wis., last week were: Ore 57,711 tons, lumber 6,500,000 feet. Shipments of ore for the season to date are 605,520 tons.

Ashland shipments for last week were: Ore, 57,711 tons; lumber, 6,500,000 feet; shipments of ore for the season to date are 605,520 tons.

Capt. James Bendry, one of the oldest captains on the lakes, died at Baraga, Mich., last week, aged 72. He had sailed on the lakes and ocean fifty years.

An indictment has been found against Capt. Stines, of of the Virginia, for an assault upon a deckhand. He will be tried in the United States District Court at Milwaukee.

The wreck of the schooner William Home lies in fifteen fathoms of water which will render it doubtful whether any attempt will be made to recover her cargo of pig iron.

Capt. John Monk, of Sandusky, has purchased the side-wheel steamer Wellington R. Burt. Being a shipbuilder, Capt. Monk will give her a thorough overhauling during the winter.

The Chicago Seaman's Union has advanced the wages of sailors twenty-five cents per day, making them now $1.75. Vessel owners say they will be unable to carry lumber at the present freights with the increased wages and will have to strip their boats and lay them up.

F. W. Wheeler & Co., Bay City, have contracted to build a triple expansion engine for the steam yacht Restless, which, it is thought, will increase her speed about three miles an hour. The diameter of the cylinders are to be 13, 19 and 32 inches by 16 inches stroke.

Mrs. A. S. Farnam, 1131 State Street, La Crosse, Wis., wishes to know the wherabouts of her brother, Walter W. Calvers, 30 years old, heavy set, very dark and smooth face. Not having heard from him for some length of time, she is afraid that he is among the list of recent losses where the names of the crews have been unobtainable.

Capt. Towers, district manager of the Richelieu & Ontario Navigation Co., is reported as saying that at the next meeting of the directors in Montreal a very important item was to be discussed, viz: the advisability of building a couple more steamers for the lake route. These steamers would be of the most modern design and would ply between Toronto and Prescott.

## MARITIME LAW.

### DAILEY V. SCHOONER MARY FREELAND.

*U. S. District Court, Eastern District of New York.*

SALVAGE—VESSEL ADRIFT IN HELL GATE—RUNNING LINE TO SHORE. Seven hundred and fifty dollars salvage awarded to three men who ran a hawser to shore from a schooner adrift in Hell Gate, and got her fast to the bank.

Bendict, J.

### HARRIS V. STEAMBOAT NUTMEG STATE.

*U. S. District Court, Southern District of New York.*

COLLISION—STEAM VESSELS CROSSING—WHEN DUTY TO MAINTAIN SPEED. A steamtug, which gave two whistles to a steamboat on her starboard hand and on a crossing course, and then slowed her own engine, was held in fault for the collision which would become of such slowing, it being directly contrary to the meaning of the signal and essentially thwarting manoeuvre.

Brown, J.

### PARSONS ET AL. V. ROCKWELL.

*Circuit Court of Appeals, Fourth Circuit.* May 22, 1894.

SALVAGE—COMPENSATION—REVIEW ON APPEAL. A steamship, worth, with her cargo, about $160,000 was disabled by the breaking of her shaft, far out at sea, and after drifting under sail several days, changing her position but little, was taken in tow by another steamer, valued at $125,000, whose cargo was worth $400,000, and whose freight and passage money amounted to $13,000. No unusual trouble occurred, and no unusual risk was involved in the towage, and the only storm encountered arose on the fourth day, when the vessels were anchored in a place of comparative safety; and, on the next day the towage was completed. Held, that an award of $35,000 was excessive, and should be reduced to $20,000.

Appeal from the District Court of the United States for the Eastern District of Virginia.

This was a libel by Cyrus O. Rockwell, master of the steamship Saginaw, against the steamship Phoenix, John J. Parsons, and Thomas Linton, claimants for salvage. The District Court rendered a decree for libelant. Claimants appealed.

LIABILITY OF TUGS. In the case of the W. E. Gladwish, 17 Blatch., 77-83, Chief Justice Waite, in reference to the obligations of tugs, says: "The tugs undertook to bring to this work such prudence and such nautical skill as was ordinarily required in such navigation; more was not contracted for, and more was not expected."

In the case of the Allia & Evie, 24 Fed., 745, 749, the general subject of the obligation of a tug as affected by the usages of the time and place was considered: "The requirements of law are substantially the same, both as to the adequacy of the tug for the work assigned her, and as to proper weather for starting out; and it is the same that is applied to seaworthiness, viz.: reasonable sufficiently for the particular trip or voyage, according to the judgment of persons versed in the business. The defense of unseaworthiness is not made out by showing that 'a stouter ship might have survived the peril.' Amies v. Stevens, I Strange, 128. The law does not require a vessel, to be seaworthy, to be capable of withstanding every peril; nor that a tug be capable of rescuing her tow in all weather; nor that she shall start only when there is no possibility of danger; nor that the master in any emergency shall infallibly do that which, after the event, others may think would have been best. The Hornet, 17 How. 100; The Star of Hope, 9 Wall, 230; The W. E. Gladwish, 17 Blacht, 77, 83; The Mohawk, 7 Ben., 139. The tug must be reasonably adequate for the work undertaken; managed with reasonable judgment and nautical skill; and she must start only in weather that in the judgment of nautical men is reasonably safe for the trip. In whatever form the question comes up, whether as to seaworthiness, adequacy for the work, or the time of starting, it is a practical question of reasonable prudence and judgment. And as regards seaworthiness in general, or the adequacy of the tug for the work undertaken, there is no other final criterion than the judgment of a practical man versed in the business and customs and usage of the time and place, viewed as representing the customs and practice of nautical men as admissible. See The Titania, 19 Fed. Rep. 101, 105, 109, and the cases there cited. The exercise of reasonable prudence and judgment, measured by this standard, does not exclude some remaining maritime risks. Against these risks it is the province of insurers to provide; otherwise, the shipper is his own insurer."

The question of reasonable judgment and skill as affected by the general custom and practice of the time and place, is similar, whether it regards towage or unseaworthiness, or stowage, or navigation. See The Wilhelmina, 40 Fed. 89; The Dan, 40 do., 691; The Titania. supra; The Frederick E. Ives, 25 Fed., 447, affirmed on appeal.

Chief Justice Waite also in the case of the W. E. Gladwish supra (p. 94), in referring to the question whether the master should seek an opportunity to go on when overtaken by bad weather, says:

"This involved the exercise of judgment as to what ought to be done under the circumstances. A mere mistake is not enough to charge the tugs with any loss which followed. To make them liable, the error must be one which a careful navigator, surrounded by like circumstances, would not have made. * * * I cannot believe that ordinary prudence required an abandonment of the voyage, for the time being, by lying up or seeking a harbor. The tug was commanded by a competent master, and the captain of the barge was an experienced boatman. No objection was made by anyone to going on, and it is evident that no person connected with the tow considered it necessary to stop." See also the Clematis, Brown's Adm., 499, 502; The Allia & Evie, 24 Fed. Rep., 745, 749, and cases there cited.

## NOTICE TO MARINERS.

Telephone offices for the convenience of vesselmen have been established at Nine Mile Point, Hay Lake, Neebish and Sailors' Encampment. There is no one in charge of the one at the Neebish, which is at the lower end of the Dyke in a small building and can be used at any time. Thomas R. Harvey, Sault Ste. Marie, Mich., is manager of the line. The telephone line from the "Soo" to Detour has been purchased by T. C. Anthony, of Detour, who has appointed Thomas R. Harvey, of the "Soo," manager of the same.

P. M. Church, of Sault Ste. Marie, shows his interest in the lake marine by lighting Hay Lake channel at his own expense, though presumably in accordance with the rules of the light-house board. The lights on six or eight ranges were placed last week, and will be kept burning until the close of navigation. The report of the light-house board, which is now being prepared, will show that the government work of lighting this channel has progressed satisfactorily, and the lights provided for in the appropriation bill will be in place by the opening of navigation next spring.

Notice is hereby given that the red spar buoy marking the Pensaukee Shoal, which extends in a southeasterly directon from the land, between the Oconto and Pensaukee Rivers, Green Bay, Wis., has been discontinued.

By order of the Light-House Board.

COMMANDER J. H. DAYTON, U. S. N.
Inspector 9th Light-House District.

## THOSE CONNEAUT FERRY BOATS.

It has been announced during the week that the Toledo Dry Dock Co., A. Gilmore & Sons, had closed the contract with President Dick, of the Shenango Railroad to build a railroad car ferry for the route across Lake Erie between Conneaut, O., and Port Dover, Ont. This report has been denied by wire this morning from Toledo, although the Toledo Dry Dock Co. has figured on such a contract, as have nearly all other lake shipbuilders. No contract has yet been placed, and we may add that until the promoters of the enterprise manage to get either more money or credit the contract for building special class tonnage is not likely to be placed.

## AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation: A second bearing of the Sun may be taken at sunset by reversing the bearings to read west instead of east, as, for example, E. by S. for a sunrise bearing would read W. by S. for a sunset, or E. 16° S. to W. 16° S.

LAKE ERIE AND S. END LAKE MICHIGAN LAT. 42° N.

| Sunrise. | Bearing (degrees.) | Bearing (points.) |
|---|---|---|
| Oct. 30 | E. 19° S. | E. by S. ¾ S. |
| Nov. 3 | E. 20° S. | E. by S. ¾ S. |

LAKE ONTARIO, S. END HURON AND CENTER LAKE MICHIGAN LAT. 44° N.

| Sunrise. | Bearing (degrees.) | Bearing (points.) |
|---|---|---|
| Oct. 30 | E. 20° S. | E. by S. ¾ S. |
| Nov. 3 | E. 21° S. | E. by S. ⅞ S. |

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

| Sunrise. | Bearing (degrees.) | Bearing (points.) |
|---|---|---|
| Oct. 30 | E. 20° S. | E. by S. ¾ S. |
| Nov. 3 | E. 22° S. | E. by S. ⅞ S. |

LAKE SUPERIOR LAT. 48° N.

| Sunrise. | Bearing (degrees.) | Bearing (points.) |
|---|---|---|
| Oct. 30 | E. 21° S. | E. by S. ⅞ S. |
| Nov. 3 | E. 23° S. | E. S. E. |

With a compass correct magnetic, the difference between the observed and true bearings will be the variation for the locality. If there is any deviation on the course the vessel is heading at the time of taking the bearing the result after the variation is applied will be the amount of deviation on that course.

## NOTES.

CORRESPONDENTS of Messrs. A. F. Bartlett & Co., Saginaw, Mich., write that firm to know where they can have flat bottomed boats, generally called "packet boats," built. One to be built is to be about 50 feet in length and 9 feet beam. There may be some of our subscribers who would desire to submit figures for the above.

OLD sailor's yarns are always rather straining to the average person's credulity, but it has remained for Mr. Henderson to tell the most captivating impossibilities—the breeziest and briniest sailor's stories of the century. These stories, about fifteen in all, have been published from time to time in *Harper's Young People*, and one of the best appears in the current issue. They are to be collected in book form ultimately.

MURRAY & TREGURTHA, South Boston, Mass., have not found their business at all restricted by the hard times. The year 1894 has thus far been a very busy one with them. The sale of their Tregurtha water tube boilers is now more than double as great as in the whole of 1893 and the prospects for future orders are encouraging. They have recently shipped a 5 foot by 6 foot Tregurtha boiler to the Georgetown Rice Milling Co., Georgetown, S. C., and are now building a 35 inch boiler for Joseph S. Williams, Taunton, Mass. They have also shipped 25 foot launches to G. L. Wright, North Audover, Mass., T. F. Cassens, Deer Island, Mass., and G. F. Hunt, Boston, Mass., and are also now building a high speed 30 foot launch for Boston parties.

MR. G. W. MANUEL, engineer-in-chief of the Peninsular and Oriental Co., some time ago in his presidential address at the London Institute of Marine Engineers, pointed out that their line steamer Iberia of 1837 was a paddle wheel steamer of 500 tons gross, 180 indicated horse power and a speed of 8 knots; whereas the Oceana of 1887 was a triple expansion screw steamer of 6,600 tons gross, 7,000 indicated horse power and a speed of 16 knots. In other words fifty years meant an increase of thirteen times in the size, forty times the indicated horse power, twice the speed in knots, over twenty times the pressure of steam in pounds per square inch; and, furthermore, while the little Iberia consumed 40 tons of coal per day, the huge Oceana only consumed 83 tons.

*The Engineering Magazine*, New York, has made a new and highly commendable departure by introducing a new technical department in its pages, which must bring increased prestige and circulation to that esteemed journal. *The Engineering Magazine* will in future, as it has in the October issue, publish a "Review of the Industrial Press," and not only of the American but also a review of the technical articles contained in the journals of Great Britain. Formerly it was the custom of our contemporary to simply index such articles as were thought worthy of note and reference, giving the dates and name of publication in which the subjects appeared. It is now intended to publish an expert review of these articles, which though necessarily brief, must add to the knowledge on all subjects so treated. By this means it may be perceived that *The Engineering Magazine* will do for industrial literature all that *The Review of Reviews* does for the political and literary field, and furthermore, we can see that the departure heralds the advent of a recording bureau of the industrial literature of the world which will become enhanced as time advances. In heralding this excellent departure we have only to say that as "the schoolmaster is abroad," we hope that *The Engineering Magazine* will not limit its field to the press of the United States and Great Britain, but that it may find its way clear to touch upon at least some of the most important articles contained in the technical press of the other great nations.

## A HEAVY REPAIR BILL.

The survey on the wooden steamer Neosho now at Milwaukee, estimates that it will cost nearly $58,000 to repair the boat and place her in as good condition as she was before she went on Spectacle Reef, Straits of Mackinac, three weeks ago.

The wrecking bills incurred in getting the steamer off the reef aggregates $13,000. The insurance companies will pay the policies on the steamer as a total loss and then probaby dispose of her. The estimated valuation of the steamer previous to her stranding was $100,000 and she classed A1*, having been built under the special survey of the Inland Lloyds by Quayle's Sons, Cleveland, O., in 1888. She is 1,659 net tons.

## A NEW FORM OF BRIDGE.

(ILLUSTRATED.)

The English mechanical and scientific journals have devoted considerable space to illustrating and describing the new Tower Bridge opened at London, but it has remained for *The National Builder*, of Chicago, to reproduce a fair illustration of the bridge in its latest issue, and, as the bridge question is one that is now being given great attention at the prominent lake ports, we are enabled, through the courtesy of our contemporary, *The National Builder*, to reprint the cut of the bridge, with a brief description thereof, for which we are also indebted to *The Builder*:

The illustration on this page shows the new Tower Bridge across the Thames River, London. The photograph was taken just as the bridge was opened, June 30, 1894, and shows a procession of vessels passing up the river. The Thames at the bridge is about twelve hundred feet wide, and until this bridge was built the only way to cross the river at this point was by the old fashioned ferryman, who would row you across for a few pence. For years there was felt the need of a crossing at this point, and to this end some fifty years ago the celebrated Thames Tunnel was built, but it was only for foot passengers, and became more of a show than a convenience. This tunnel was finally used by the London underground railroad, and thus this means of crossing was cut off.

And now comes the beautiful structure shown in our illustration, the masterpiece of drawbridge architecture, beautiful and complete, and a monument to its engineer and designer, Mr. Wolf Barry. The foundation stone was laid June 21, 1888, thus taking six years to complete the work. Our photograph is at fault in one respect; it appears as though there was only one elevated road, while in fact there is one for those going each way. The elevated footway is reached by 200 steps, if you desire to walk up them, but you can be taken up in the lift, as the English call an elevator. This footway is 140 feet above the water, and at any time, should the bridge be open for vessels, the impatient business manhas not to wait, which is quite a convenience. The roadway for carriage and general teams is of the jack-knife pattern, each half being 115 feet long, while the space between the abutments is 200 feet wide. Those halves are raised and turned at will by the bridge tender, by means of hydraulic machinery, and work without noise and as smootly as can be imagined. The whole of the machinery has been duplicated throughout, in case of any accident. The whole thing is handled with perfect ease. You merely have to touch a button and up go the ponderous halves of the great roadway, and the old river is as open as the sea to the commerce of the world which has been flowing up its waters for centuries.

TOWER BRIDGE, LONDON.

## OUR MARITIME DECADENCE.

Mr. Richard P. Joy is unremitting in his endeavors to keep before the maritime public the unworthy spirit in which the nation is dealing with its oversea tonnage and the evils which free ship legislation would foist upon the country at large. In the preface to a brochure just issued by Mr. Joy he very pertinently states that the nation which transports its own commerce in its own ships commands respect, controls trade, has ships and seamen in time of war, keeps money at home instead of paying abroad for ships and transportation and gives work to home labor.

George E. Belknap, Rear Admiral (retired), U. S. N., strongly coinciding with the views expressed by Mr. Joy, has the following to say in a pamphlet which accompanies our Detroit friend's latest production and from which we quote but a part:

"The greyhounds of the Atlantic, that fly back and forth between the ports of England and the United States, under the British flag, owe their being and continued existence to the moneys derived from our ocean freight and passenger traffic; ships subsidized by the British crown and under bonds to become British cruisers and transports in the event of war. In fact, it is now proposed by the British Admiralty that such vessels be officered and manned from the royal navy in order to make them the more readily effective as cruisers and transports upon the outbreak of hostilities between England and any other power.

"While England professes to be a free trade country and her navigation laws as regards privileges accorded foreign bottoms are very liberal, the sight of foreign flags dominating the ports of London and Liverpool from the mastheads of the great bulk of ocean shipping at those commercial centers would drive phlegmatic John Bull into spasms of indignant protest and the most vehement and vigorous action as to the cause of such discredit to the British name and flag and the means of remedy thereof; but we look upon the reverse sight and the humiliating weakness it reveals in our own great ports with careless glance and stoical apathy.

"We are constantly told by the press and in the forum that we are the greatest nation on earth; but a nation with the enormous coast line and natural maritime advantages this country possesses, but with neither wit nor enterprise to utilize them, cannot be regarded as in the van of supremacy. On the contrary, so far as sending our products abroad, we are simply on a par with China. That country has a great inland and coast commerce, but no ships on the ocean; we virtually stand in the same plane commercially; each country to its loss of profit, dignity and independence, depends upon the foreigner to do its carrying trade on the ocean."

## MARITIME DISASTERS.

The administration of the Bureau Veritas has just published the list of marine disasters on the oceans reported during the month of August, 1894, concerning all flags.

Sailing vessels reported lost: American, 3; British, 19; Chilian, 1; Danish, 2; French, 2; German, 4; Italian, 3; Norwegian, 7; Portugese, 1; Russian, 1; Swedish, 1; total, 44. (In this number are included four vessels reported missing.)

Steamers reported lost: American, 1; British, 7; Chilian, 1; German, 1; Norwegian, 1; Spanish, 1; total, 12.

Causes of losses: Sailing vessels—Stranding, 18; collision, 5; fire, 3; foundered, 3; abandoned, 3; condemned, 8; missing, 4; total, 44: Steamers—Stranding, 6; collision, 3; fire, 1; foundered, 1; abandoned, 1; total, 12.

## A NEW LAKE PORT.

Orienta is the name of a new town on the shore of Lake Superior, about thirty miles below Duluth. It has a fine natural harbor, with a depth of nine to fifteen feet of water, and now the government has taken hold and has engineers investigating it, with a view of dredging and otherwise improving it, that it may be made an acceptable harbor for larger boats as it is now for smaller ones. The waters there are all under government control, and if improved would constitute the only sheltering spot between Duluth or Superior and the Apostle Islands. Orienta is also expected, with the advent of this improvement, to become a shipping port for stone and lumber in large quantities.

## THE SWAIN LITIGATION.

The case of one of the owners of the steamer V. Swain against the Insurance Co. of North America, was concluded in the United States Court at Cleveland, O., on Saturday, the jury, after a short deliberation, returning a verdict for the owners.

On October 10, 1893, the Swain caught fire while lying at a dock in Cleveland and was seriously damaged. Capt. Johnson, who owns three-fourths of the boat, had $10,000 insurance on her, on a policy against total loss or general average only. The policy gave the boat a valuation of $33,600. The form of policy taken provided for no recovery unless the cost of repairs, less the one-third new for old, amounted to one-half the policy valuation of the boat under an adjustment as for partial loss. The sum the damages must reach, as can readily be deduced by figuring, would have to exceed $25,200, or no payment was due on the policy. The question between the owners and the underwriter was, of course, the amount of damages. From the first survey there was a hitch in the matter of adjustment, and owners and underwriters could not get surveyors to come together in the appraisal of damages, so that, in order to secure an adjustment, the owners brought suit for the amount of the insurance.

The case came up Saturday, the 13th, and continued just a week. Witnesses, most of them being called to give expert testimony, were summoned from all over the lakes, and the testimony was full of interest—much more so than expert testimony usually is. Harvey D. Goulder, of Cleveland, represented the owners, and C. E. Kremer, of Chicago, assisted by Hoyt, Dustin & Kelley, of Cleveland, appeared for the underwriters. The ability of witnesses and experts on both sides was freely attacked. The case came to argument Friday, and was submitted to the jury. The latter had very little to determine, as the terms of the policy required the payment of $10,000 or nothing. The jury found for the plaintiff, allowing the underwriters sixty days in which to settle, and awarded the plaintiff in addition, the interest on the $10,000 from December 10th to date, the total amount being $11,480.

On Saturday counsel for the defense notified the plaintiff's attorneys that they would file a motion for a new trial, to be argued on October 27th, or as soon thereafter as convenient, the motion being based on the following grounds: first, that the damages given by the jury were excessive; second, that the verdict was against the weight of the evidence and the law; third, that the court erred in rejecting evidence offered by the defendant; fourth, that the court erred in admitting evidence offered by the plaintiff; fifth, that the court erred in charging the jury; sixth, that the court erred in refusing to charge the jury as requested by the defendant.

Upon the issue of this trial depends largely the outcome of three suits filed in Common Pleas Court by minor owners in the boat, for payment of sums too small for the admission of their cases in United States Courts. The question involved is precisely the same, and should the motion for a new trial be overruled, these suits will doubtless be settled out of court. The titles of these are: C. H. Cobbs against the Insurance Co. of North America; Mrs. Charles Hebard against the Sun Insurance Co., and Mrs. Martha G. Robertson against the Union Marine Insurance Co.

# THE MARINE RECORD

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FROM the Atlantic experience it is evident that the large passenger steamers do not attain their best speed in their first or hardly in their second season. This fact would argue that we have by no means learned what the first passenger steamer built for the Northern Steamship Co. at Cleveland for lake service can do as regards speed development. The North West has the lines, power and general efficiency to develop about twenty-five miles an hour, though it may take a few months more working to show this.

IT is certainly carrying the war into the enemy's camp when, after Cramps tendering to build British war ships, the American Line has recently sent in a tender for carrying the mails across the Irish Sea between Holyhead and Kingstown, where the fastest steaming boats are kept running all the year round. The shipbuilding tenders were thrown over the shoulder by alleging that they were submitted to the British admiralty too late to compete with other firms, but, while this could not be said of the mail tender, it is quite certain that Americans would not be awarded a contract to carry mail in British waters.

SENECA SHOAL, near Bu ffalo, has surely caused damage enough now to require it to be properly marked. The new steel steamer Alva, is the latest victim, having been released from there last Sunday. The cost of assistance, detention, surveys and even minor repairs, on this one vessel alone, will no doubt be more than the season keep up of a warning signal, or why not dredge out the shoal altogether, even if a little blasting had to be done, to prevent further damage to shipping. In smooth water a bell buoy would hardly indicate the danger, but a gas lighted buoy or an automatic whistling buoy. for thick weather might prevent further mishaps.

WONDER if in a decade or two engineers will not loo back at the present generation and cast aspersions on the mental ability of the men who required to load a steamer with a part cargo of fuel so as to get her over the ground, when the actual power might have been furnished from alongside in free and unlimited quantities, thus requiring but a moiety of the present fuel for initial motion. Rotary turbines, hydraulic jet propulsion by means of large pumps seems from experience to be mythical in their efficiency, although showing well on paper, and the way is yet open to re-discover some means of using hydraulic machinery with economy for propelling vessels.

IT IS possible to make a too successful job in getting afloat a stranded vessel, at least the underwriters on the steamer Neosho recently taken off Spectacle Reef, Straits of Mackinac, and towed to Milwaukee, must think so. In this case the steamer, valued at $100,000, was abandoned to the underwriters and they proceeded to release her. The splendid efforts of the wrecking expedition were successful, and now to repair the vessel it will cost about $60,000 to which must be added $13,000 for wrecking expenses. The owners of course collect for total loss and there is no doubt but that the underwriters wish they had let it go at that or else have been less eager in piling on wrecking charges.

## ANOTHER SUBMARINE CRAFT.

It remains a query whether man in this generation is to successfully accomplish the art of navigating or sailing through the air in a machine thoroughly under control and of commercial value. Enthusiasts on this subject, and, indeed, some of the brightest minds extant, believe that we are already on the eve of an air ship traffic, but it should also be said that a vast majority look upon the project as an impossible conception for transportation uses.

While the foregoing is pertinent on the air ship problem, inventors are meeting with more marked success in the matter of submarine navigation, and perhaps Jules Verne's imaginary voyage under the sea may be nearer of accomplishment than we are ready to admit. Certain it is that during the last two or three years immense strides have been made in this direction under government auspices, as well as by private inventors. For purely naval purposes, the principal maritime powers are at present engaged in secret endeavors to produce a submarine vessel which can be propelled at a desired depth with safety to her crew, and so that she may effect the object for which such a craft is designed. Already the French have shown wonderful adaptability in this direction in the tests of the submarine torpedo boat Gymnote, and more recently the Gustave Zede, which, it is claimed, can maintain a speed of fourteen miles an hour for several consecutive hours while submerged, so flattering a result places the French in the van of scientific and mechanical skill in this special departure.

The United States is not a whit behind the times, however, in its endeavor to bring out a successful submarine torpedo boat, and the Holland, Baker and Raddatz types have received the closest scrutiny from the navy department. At this time a Baltimore inventor named Lake comes forward with a submarine boat which, after years of study and experiment, he claims to have perfected so that the boat is capable of performing every possible requirement in a submarine craft, besides being easily transferred into a torpedo boat; furthermore, the crew can live in her as comfortably as when on shore. From the brief account of this craft with which we have been furnished, it is not stated whether steam or compressed air is used for surface propulsion, and it must be surmised at this time that Mr. Lake has succeeded in perfecting a system of accumulators and storage batteries adapted to the needs of submarine navigation. This new craft will be introduced to the attention of the naval committee having the plans for a submarine torpedo boat in hand, after which, if she is as successful as her inventor claims, the United States will no doubt lead in the development of submarine navigation, at least for awhile.

## EXCESSIVE VIBRATIONS.

REPORTS are again rife that two new steel steamers have suffered during the recent heavy weather on Lake Superior, and that their stringer plates or upper strake not only shows signs of punishment, but in one case at least a plate located nearly amidships is cracked clean through and will have to be replaced. The query will not down until it is solved, viz: what is the cause and knowing same, how to prevent such casualties in the future. It has perhaps been thought that longitudinal strength would always prevent a vessel from buckling, but it would appear that where a weakness is found on only one side and that amidships there may be a lack of transverse rigidity allowing the hull to have a twisting motion. Again, it is well known that under extreme conditions, say steaming into a head or heavy beam sea without cargo, many large metal steamers show so much vibration that it amounts to an undue strain on the hull and the greatest amplitude of vibrations, vertical or transverse, may perhaps be found where the punishment can easily be seen when it affects the fabric of the vessel. Undue stresses must positively strain the hull as a construction, either in one part or another, and such we would term and expect from excessive vibrations, made more dangerous perhaps by the heave of the sea when the elasticity of the structure was subtended to its greatest elongation Observant shipmasters no doubt appreciate the speeds and weather conditions under which their vessels may be handled with the greatest ease to the structure and its wearing ability, yet we cannot but think that if the nodes and points of the maximum vibrations were carefully watched under the varying conditions, more might be learned relative to the kindest way to handle a long ship, loaded or light, when in heavy weather, and this might also point out a means of reducing what might be termed the most dangerous periods of vibration to a minimum. In any case thoroughly reliable data on these points would be of vast assistance to the lake shipbuilder more especially as the conditions and experiences as well as the models of the vessels differ on the lakes to that of the ocean and coast trades.

## RIVER TUGS AS FIREBOATS.

In the lead, as usual, Chicago is now considering the advisability of equipping ten of the river tugs as fireboats for the better protection of business interests adjoining the water front of her lengthy and circuitous river. The chief of the municipal fire department, as well as the managers of insurance companies and commercial interests, have got together and will devise plans for carrying the project to a successful issue—a departure, by the way, which might also be taken advantage of at many other lake ports.

According to the views expressed by the chief of the fire department, he held that if the business interests along the river front could guarantee half the expenses, the city would not be slow in taking the matter in hand and completing arrangements. He thought that ten boats could be equipped at an average cost of $1,500 each. The proposition made by the tug owners is to receive $300 per annum for carrying the apparatus; when in actual service $20 to be paid as compensation to the tugs for the first hour's work; $16 for the four following and $10 after the first five hours; at all times the tugs to be under the control of the fire department and to be ready for a call at all hours. These plans and the schedule of payments seemed to meet the approbation of those most interested, and there is no doubt but that Chicago will soon have the most complete fire protection along her water front of any port on the lakes, if not in the world, and this, too, at a minimum cost to those benefited.

## THE "I WILL" OF CHICAGO.

THE Chicago representatives to the Toronto Deep Waterways Convention report in favor of the St. Lawrence route in conjunction with Lake Champlain and the Hudson to the seaboard as being the most available for foreign and domestic commerce, though wisely refraining from farther committing themselves until more exhaustive examinations have been made ; furthermore, it is reported that the State of Illinois would be repaid even if Chicago itself expended the amount necessary to make that city a sea-port. Chicago is nothing if not enterprising. In the face of the most aggressive opposition, the Hennepin canal project was carried through; against the utmost competition that could be waged, she secured the site of the World's Fair, and now, not content with her near approach to water traffic via. the Mississippi, and thence to the Gulf of Mexico, an eastern outlet is desired north about, which, if it takes years to accomplish, we are rather of the opinion that she will again be successful if she earnestly sets out to gain a northern outlet. A waterway to the coast, however, is not a question for any one state to wrestle with. A unanimous voice and vote working through the general government is the only means to be used where interstate and international interests are concerned, and on this line only can adequate communication be opened between the lakes and seaboard. American interests should support the Hudson rather than the Gulf of St. Lawrence, though it may be pointed out that while winter navigation is impossible on the lakes, ice, the *bete noir* of the St. Lawrence, no longer counts against that channel way for lake traffic.

A CORRESPONDENT suggests that in future lake shipmasters desiring licenses should be examined regarding their knowledge of magnetism as it affects the compass, and how to place magnets so as to minimize the error or correction where large quadrantal or semi-circular deviation is found in iron and steel steamers. This suggestion is well worthy of attention, but we must confess that if candidates now receiving first-class licenses at lake ports were only required to have a thorough knowledge of the "Rules of the road" the application of compass corrections, and the means of finding same, together with the working out of a simple "day's work," we would be amply satisfied for a year or two without going into the laws of magnetism.

### RAFT TOWING.

IT would appear that there is room for raft towing regulations to be put in force on the coasts as well as on the lakes, although it must be admitted that, notwithstanding the attention which has been given to this subject, the restrictions on lake raft towing are still in a very unsatisfactory condition, owing to the influential protests and opposition of the lumber interests. It is now reported that a raft containing ten thousand spars, valued at $35,000 and consigned to the Southern Pacific Railroad, which left the Columbia River for San Francisco, has gone to pieces on the coast, and vessels bound to 'Frisco report encountering drifting logs seriously menacing navigation. All interests are at one relative to the destruction of derelicts, but if our eastern and western seaboard is to be strewn with logs, liable to be hurled end on in a gale of wind towards perhaps the most vulnerable part of a steamer, to land on her decks at night time, or to foul propeller wheels, there will be much more danger experienced than from an abandoned hull floating around. There has not been that danger or damage occasioned by rafts breaking up on the lakes that one might expect, no doubt because the timber is usually recovered directly after the weather moderates, but this can not be very well done on the seaboard, hence the greater caution necessary for raft towing on the coasts and the further need of government supervision in enforcing proper restrictions dealing with the size, method of construction and towing power on all rafts, which, if broken up in transit, are sure to become a menace to safe navigation and therefore an obstruction to commerce.

### STATE BOUNDARY RIGHTS.

IT may not be too late for at least some of the states whose shores are washed by the lakes or navigable rivers, to get a bill through their Legislature empowering the state to institute condemnation proceedings where land is owned or occupied within, say, a distance of two or three hundred feet from the bank or shore line. This reservation the citizens of the state are entitled to so that no private encroachments can be made on the shore line. The only restrictions in force at present are the harbor lines as defined by the corps of engineers, U. S. Army, and out to that point private interests may make land, providing that it is no obstruction to the general commerce; therefore, any one purchasing land on the lake shore may not only secure that portion marked to the water's edge, but proceed on adding to his territory by making a free dumping ground and encroaching on the lake front, thus taking from the state more land than he is justly entitled to or that his title deeds originally showed. The state alone should have the right of way and title to all territory bounded by water for at least a distance of some hundreds of feet inland. Had such a custom been adhered to, a splendid boulevard would by this time have been built along the river front at Detroit and the Lake Shore railroad could not have commanded so much coast line, as it now controls to the detriment of all other interests seeking a water frontage, and to the injury of the citizens of the State as they are blocked out from even viewing their State boundary line on portions of the lake shore.

ON the completion of the new lock at the Sault, work should at once be commenced on the deepening and enlargement of the present lock. There is no wisdom in waiting until commerce is hampered before beginning indispensable improvements and we have but to glance at the past and present to learn the certain requirements of commerce which will be called for in the future. No expenditures that the general government ever made or can make has given the abundant returns which the outlay for aids to navigation and the conservancy and improvement of lake waterways has given to the citizens of the country at large, and this is the best argument in favor of more liberal appropriations. Frequent detentions at the Sault are not uncommon now, and a delay of twenty-four hours, a circumstance which has been noted this week, is a dead slap at commerce.

WHERE qualified surveyors, experts and an unusually high class of technical talent disagree relative to the damages and cost of repairs on a vessel, there is no other alternative in supporting the equities of all concerned but to carry the entire subject before the courts. Such was the case in the Swain damage suit at Cleveland last week, though we are sorry that an undue amount of derogatory personality chipped in throughout the trial. Relative to the merits of the case, we can, of course have nothing to say, further than in all such cases the general sympathy is in favor of the plaintiff or poor man as opposed to a company or corporation of interests, and that when underwriters are especially advised by their surveyors and other experts that their rights are being or likely to be invaded, they have no recourse but to accept the final decision of a legal ruling as deduced from a preponderance of the evidence submitted, and this, too, without prejudice to any of the principals engaged in the contention or litigation.

WITH much courtesy and forethought, Gen. O. M. Poe corps of engineers, U. S. Army, advises masters of vessels passing up or down at the foot of Lake Huron to go to the west of the red dredge (Cram's). There is some 1,600 feet between the two dredges. Boats are now in the habit of passing between Cram's dredge and the lightship, and as the channel there is only 200 or 300 feet wide it is dangerous, and greatly impedes the progress of the work. The course Gen. Poe refers to is straight along the middle of the 21-foot channel, and is shorter, as well as safer than the course now taken by a majority of vessels. The dredges give signals for passing, but it would appear that little attention is paid to passing signals given by a stationary object such as a dredge, and in many cases it may not be understood that the whistles are meant for passing signals.

### LAKE FREIGHTS.

Iron ore freights have fluctuated during the week, Escanaba charters having been placed at 45 cents and the going rate of 50 cents being paid on the same day. A similar feature was noticeable in the Marquette rate, 70 cents having been taken, which marked a 5 cent drop. The prevailing rates are 90 cents Ashland and 85 to 90 cents Duluth; 70 to 75 cents Marquette, and 50 cents Escanaba to Toledo; other Ohio ports 5 cents less, though it is confidently expected that these rates will harden up in the course of the next few days and exceed former quotations.

The demand for coal tonnage is fairly brisk at Ohio ports, though detention in loading has been experienced at Cleveland, also at Lake Michigan ports, notably Gladstone. so that an advance on present rates is looked for. The latest charters were made at 35 cents to Duluth, 40 cents to Portage, Gladstone and Escanaba; The Rivers, 30 cents, Erie to Chicago, 70 cents, though these figures will go up after November 1st. The rate on hard coal from Buffalo advanced 10 cents to Duluth and is now at 30 cents. Last year at this time it was only 15 cents, advancing about the 28th to 25 cents and closing the season at 40 cents, a figure which it is likely will be passed this fall. To Chicago the rate is 70 cents, and 65 cents to Milwaukee. Oswego rate is now $1.05 to Chicago; Toledo, 50 cents.

The grain rates out of Chicago have again slumped to ⅞ cent on wheat to Buffalo, though rates were flat on 1 cent through the week on wheat, corn and barley; 2¾ cents is the quotation on wheat from Duluth to Buffalo, and 2½ cents to Detroit, pending a rise in ore freights. The Lake Ontario figure is nominally 4 cents.

### LIGHT-KEEPERS APPOINTED.

The Secretary of the Treasury has appointed Louis Belounde second assistant keeper of the light station at Waugoshance, Mich., and Isadore La Croix second assistant keeper of the light station at Squaw Island, Mich.

### DUTY ON BOOM-STICKS.

The Michigan lumber interests by no means relish paying the 20 per cent. tariff or duty which Canadians levy on boom-sticks every time they enter a port for a raft of timber. At a meeting held in Bay City on Tuesday, it was decided to appoint a committee to consult with the Privy Council at Ottawa, and to prepare a bill to present to the next Congress, which will give the government power to retaliate if Canada persists in the present tax levy.

According to the new Canadian tariff, there is no export duty on logs, but 20 per cent. is charged every time the boom-sticks are towed into port to form a raft. The value of these boom-sticks are about $5,000, so that the tariff amounts to $1,000 on an average valuation of these facilities for raft towing.

### A LIKELY NEW PORT.

A letter has been received by the Rochester, N. Y., Chamber of Commerce from Capt. Daniel C. Kingman, corps of engineers, U. S. Army, stationed at Oswego, N. Y., stating that he has been delegated to make a preliminary examination of the channel connecting Irondequoit Bay and Lake Ontario. Secretary Moss, of the Rochester Chamber of Commerce, says that if the proposed canal from Toronto to Georgian Bay goes through, the opening of a harbor in Irondequoit Bay would give the region the opportunity of furnishing the coal supply for the whole northwest. Mr. Moss says that the fact that the bay is surrounded by hills on all sides gives an excellent opportunity for the erection of coal chutes. The harbor, also, would be an excellent one, and able to afford refuge for the entire commercial fleet of the lakes.

### THE DOMINION FAST TRANSATLANTIC LINE.

An Ottawa dispatch says that the scheme for placing a 20-knot steamship service on the Atlantic route between Canada and Great Britain, and toward which the Dominion parliament last session voted an annual subsidy of $750,000, has received a severe set-back in the repudiation of the scheme as impracticable by the Deputy Minister of Marine, Wm. Smith, who has had more than twenty years' experience as head of the marine department of the Canadian government.

Mr. Smith says it is folly to talk of running steamships through the St. Lawrence River and Gulf at the high rate of speed proposed by Mr. Huddart and his associates. He ridicules the views expressed by Admiral Hopkins and others that there are no obstructions to prevent a high rate of speed being maintained in the St. Lawrence. Viewed as a commercial enterprise, he contends that the proposed fast line of 20-knot service between Canada and Great Britain can never prove a financial success.

Commodore Wakeham, who for twenty years has been in charge of the fishery protective cruisers in the river and gulf of St. Lawrence, and whose knowledge of the navigation of these waters is very extensive, holds the same views as the deputy minister of marine.

Promotor Huddart, whose efforts toward getting the fast line project favorably pronounced upon by the Dominion House of Commons were successful, refers to a letter written by Mr. Andrew Allen, of Montreal, and published in a Canadian blue book. It is dated May 28, 1891, offering for £5,000 a voyage to supply steamers capable of doing 20 knots an hour. This Hon. Mr. Foster declined.

Admiral Hopkins regrets that the men who built the C. P. R., the major part of the route, are not backed up by some enterprising company. The commanders of the Allen and Dominion Lines would with alacrity exchange their present vessels for 20-knot ones. The average detention for fog is not greater for a fast than for a slow vessel.

### STAGE OF WATER AT ST. MARY'S FALLS CANAL.

DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Depth of water at the St. Mary's Falls Canal for the week ending Oct. 25, 1894:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct. | 18 | 8 a. m., | 14 | feet | 8 | inches. | 8 p. m., | 14 | feet | 7 | inches |
| " | 19 | " | 14 | " | 7 | " | " | 14 | " | 7 | " |
| " | 20 | " | 14 | " | 8 | " | " | 14 | " | 7 | " |
| " | 21 | " | 14 | " | 4 | " | " | 14 | " | 8 | " |
| " | 22 | " | 15 | " | 0 | " | " | 14 | " | 7 | " |
| " | 23 | " | 14 | " | 7 | " | " | 14 | " | 8 | " |
| " | 24 | " | 14 | " | 6 | " | " | 14 | " | 7 | " |
| " | 25 | " | 14 | " | 3 | " | " | | | | |

### LAKE LEVELS.

Major E. H. Ruffner, corps of engineers, U. S. Army, stationed at Buffalo in charge of the conservancy and improvements of rivers and harbors in that district, writes to the Buffalo *Express* as follows:

"Referring to your editorial, 'In a New Channel,' I note that it is thought by many that there is a permanent difference in level between lakes Michigan and Huron. Such is not the case. The United States Lake survey made an exhaustive examination of this question. In Gen. Comstock's final report on the primary and triangulation and other features of the work, he says, p. 608, that there is no permanent difference between the levels of these two lakes, or, if there be, it is not over one-tenth of a foot in value. Winds and storms cause the only difference of moment. If the flow down the Chicago Drainage Canal is not supplied by the watershed of Lake Michigan, it must come from Superior or Huron."

## HYDRAULIC PROPULSION.

There crops up occasionally and very regularly a new process of adjusting pumps and machinery so as to take advantage of the hydraulic jet propulsion system as applied to moving steamers. Quite often have we heard that in one form or another hydraulic jet propulsion was to take the place of marine engines and screw propellers and revolutionize the ocean traffic.

Hydraulic propulsion with the use of ordinary machinery has also been looked into and experimented with, and the event of a recent launch of a salvage steamer at London fitted to use hydraulic power was made the subject of an article in *La Nature* on hydraulic propulsion as applied to vessels. As showing the progress in the development of this idea, the following brief extract is appended:

"If one recalls a very interesting memoir on navigation at great speed presented by M. Gaudry to the society of civil engineers, it will be found that mention is made of a hydraulic propeller recommended in 1843 by the mechanician Cave. A column of water was discharged behind the stern, and the author announced that the force with which it struck the surrounding water determined, by reaction, the advance of the ship. The facts in greater detail are that Cave's experiment was conducted between Asnieres and Neuilly, on a ship 35 metres long, provided with an engine of 30 horse-power. The wheels had been removed, and the machinery operated two pumps which maintained the column of water. The ship made half the speed at which this column was driven, and Cave flattered himself that he would attain a speed of 23 knots an hour with a turbine ten metres in diameter, making 60 revolutions a minute.

About fifteen years later the German professor, Fleischer, conducted a series of experiments with a hydromotor, and reported that he had been able to obtain a speed of nine knots. Later, in 1890, Dr. W. M. Jackson, of New York, experimented with a ship to which he gave the name of Evolution. This ship was 32 metres long. 7 metres beam and a draught of 1½ metres for a displacement of about 110 tons. A Worthington steam pump discharged in a right line behind the stern a single jet of 19 millimetres diameter, with a speed of 186 metres a second. Dr. Jackson calculated on obtaining a pressure of 140 kilograms per square centimeter at the orifice, but with an opening of 19 millimeters he did not in reality obtain more than 7 kilograms, although the jet was of great rigidity and rapidity. The speed attained was about 10 knots an hour, in lieu of 33 knots as announced.

An English engineer, Mr. Alexander Vogelsang, reopened the question of hydraulic propulsion, and approached the problem from quite a different point of view from his predecessors in the field. Guided by his experiments, he estimated that the true force of hydraulic propulsion is due to the reaction of the pressure at the orifice against a point situated inside the pipe of water and opposite to the orifice. According to him, to produce an augmentation of the pressure in the pipe, and at the orifice, it is not necessary to constrict it. The desired resistance to the outflow of the water is secured by means of the suddenness and short duration of the contact of the compressed water with the water in which the ship is floating. These objects are achieved by rapidly revolving the apertures of escape, aperatures going beyond the extremity of the discharge pipe. The surrounding water, not being able to get out of the way at once, offers an enormous resistance under the jerking jets recommended by Mr. Vogelsang.

It will be seen that the problem has already entered its practical stage—the more so that the City of Glasgow is not the only salvage boat operated by hydraulic pressure. In fact, at the close of 1890, the Messrs. Green launched a boat of this class with a displacement of 21 tons, a length of 15m. 24, and a breadth of 3m. 66. This boat, called the Duke of Northumberland, was constructed on the plans of the engineer Thornycroft. Her trial speed was 8.42 knots. The motor machinery is a horizontal turbine, making 1,000 revolutions a minute, and discharging 1,000 liters per second.

As regards the City of Glasgow, her length is 16m. 15; breadth, 4m. 88, with a depth of 1m. 67. She is able to carry 30 or 40 passengers along with a charge of four tons of coal and half a ton of fresh water for the engine, which was constructed by Penn, of Greenwich. This engine weighs 8 tons, and developed 180 horse-power at its trial, making 370 revolutions and going 8½ knots. The boiler works at high pressure. There are two turbines, and water being sucked up on both sides through a rectangular orifice; the discharge is similar on both sides, with a tube of 305 millimeters directed toward the stern, and another of 228 millimeters on the bows, so that the boat can easily be driven ahead or astern.

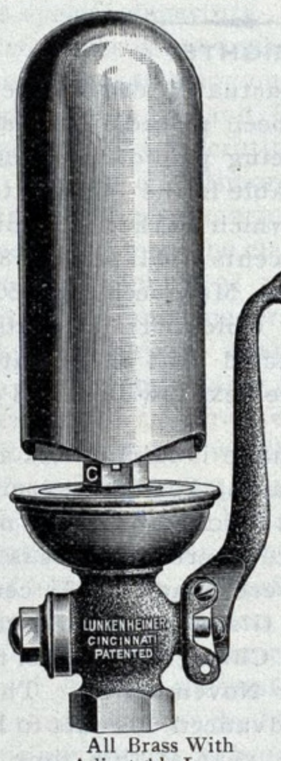
## WATER TUBE BOILERS.

The September number of the Rome *Rivista Marittima* contains an instructive and exhaustive paper on water tube boilers, by Nabor Soliani, one of the foremost of Italian naval engineers. After a practical description of all the varieties of this type of boiler, he gives a valuable theoretical disquisition on their relative efficiency, and, in conclusion, expresses an opinion that the future of water tube boilers is now well assured. What particular system will be preferred, he considers a question to which it is yet too early to find an answer. The Belleville boilers have been particularly successful. They are admitedly superior to some other types, for use in large ships, but some other varieties run them very close in popularity. For torpedo boats it is probable that the boilers of Yarrow, Thornycroft, White, Normand and others will continue to be used until experience demonstrates that one or more of these is superior to the rest, and bears away the palm. Altogether the *Marine Engineer*, London, says that this is one of the most admirable articles which the subject of water tube boilers has yet called forth. It will be remembered that Col. Nabor Soliani discussed the merits of tubulous boilers at the international engineering congress, held in Chicago during the World's Fair.

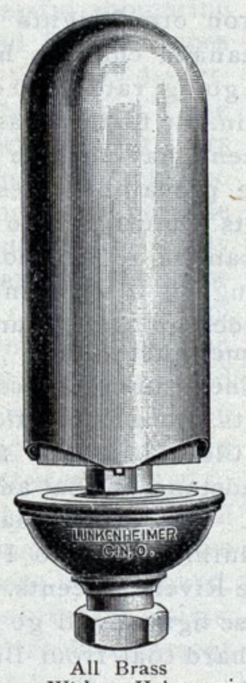
## PATENT SINGLE BELL CHIME WHISTLE.

(ILLUSTRATED.)

The Lunkenheimer Co., of Cincinnati, O., have just perfected a new single bell chime whistle, as shown in the accompanying cuts. The advantages set forth in the improved whistle are in the combination of three distinct tones being blended into one, producing a harmonious sound and yet being more acute and piercing than the ordinary whistle, thus allowing the sound to be heard at a greater distance without having the disagreeable screech or sound of the common whistle when close to. Another advantage is pointed out in the facility with which the bell may be raised or lowered to suit varying steam pressures, a feature that is only found in the Lunkenheimer manufacture. In adjusting the bell it is only necessary to loosen jam-nut (C) and screw the bell up or down, until the whistle blows best, then fasten the jam-nut until another adjustment is desired.



All Brass With Adjustable Lever.



All Brass Without Valve.

## BUILDING AT THE DAVIDSON YARD.

Capt. James Davidson has laid the keel for the second of the steamers it was announced some time ago he was to build at his Bay City shipyard. The general dimensions of the new boat are: 306 feet keel; 43 feet beam and 26 feet molded depth. The engines will be triple expansion with cylinders 20, 33 and 54 inches in diameter by 42 inches stroke. The boilers will be two in number, and of the Scotch type, 13 feet long and 13 feet in diameter. At the same yard are also building two lumber lighters, 150 feet long, 34 feet beam, with schooner bows and keels. They will be used for transporting lumber from Lake Huron and Georgian Bay points to Bay City.

## IN FAVOR OF THE ST. LAWRENCE ROUTE.

Capt. J. S. Dunham and Lyman E. Cooley, who were appointed as delegates from the Chicago Board of Trade to the Deep Waterways convention at Toronto, have submitted their report and recommended that the board give their support to the movement for securing the deepening of the St. Lawrence canal system to enable ocean vessels to reach the lakes. The importance of the convention at Toronto was fully appreciated by the public and its proceedings were the subject of liberal discussion in the press of the country. The gathering was composed of representatives of the allied interests of the United States, west and northwest, and Canada, and its deliberation resulted in the appointment of committees for the purpose of spreading the agitation for ocean navigation to the lakes throughout the two countries.

Messrs. Cooley and Dunham embodied in their report four recommendations for the consideration of the members of the board of trade. The advantages of the work begun at Toronto, from a Chicago standpoint, are enumerated, and the board is exhorted to take up the matter vigorously. The plans of the Deep Waterways Association for the extension and development of the project are detailed and the progress already made is reviewed. The report states that the convention inclined toward the St. Lawrence, Champlain and Hudson channels as the best. It says that the reasons for selecting this way are based upon information furnished by engineers and that it seems altogether the most desirable, as investigation now indicates.

One clause in the document says that Chicago could well afford to undertake the task of deepening the channel to the coast itself, because of the great advantages that would accrue from being practically a seaport city. This means that ocean navigation to the lakes would be worth $100,000,000 to Chicago. It will be some time, however, before the fruits of the Deep Waterways Association's labors can be seen, but even now the aim to get the project before the two governments is on the way to accomplishment. Every state in the northwest has committees at work, and in the Dominion similar agitation has been commenced.

"People laughed at the first convention held to secure a twenty-foot channel through the Great Lakes," said Capt. Dunham, "but the scheme was engineered quite readily, and it is not unlikely that this larger and more comprehensive plan will be pushed to completion before long. It means that foreign trade will have access direct to Chicago. It is a great undertaking and it will focus the interest of two nations before long."

## THE ACME OF NAVIGATION.

The San Francisco *Argonaut* is authority for the following good story: One of the most distinguished navigators in the United States Navy was engaged, some years ago, as navigator on one of the old-fashioned sailing ships of the navy, and, as it was his first billet, he was desirous of making a very good impression. For the first few days he took his observations and worked out the reckoning with the greatest care; but when the ship had been out several days he forgot to wind the chronometer, which kept Washington time. It was impossible to make calculations on the ship's position. He did not dare to tell the commander of his mishap, so he continued to take the altitude of the sun every day in the most serious manner, and reported the ship's position as he was able to estimate by dead reckoning—a rather uncertain operation. Early one morning, when he thought they must be near Barbadoes, their first destination, he called a young sailor to him, and said: "My man, I want you to go to the masthead and look out for land; but when you sight it do not call out 'Land, ho!' in the usual manner, but come down quietly and tell me about it." The sailor ran aloft, and when, at about seven bells, or half-past eleven a. m., he saw a thin blue streak to the southward, he came down from aloft and reported it to the navigating officer. "Go aloft and report land in the usual manner at eight bells," said the latter.

Hardly had the sailor reached his perch again when the commander came on deck, and walking to the navigating officer, asked: "About what time shall we sight Barbadoes, sir?" "At precisely eight bells, sir," was the answer. "What!" cried the commander, "do you pretend to be able to figure out to the minute the time when we will sight land? I never saw a navigator who could figure within two hours, and I have seen some good ones."

Pretty soon the bell struck eight times, and the cry of "Land, ho!" rang out from the masthead. The commander took the navigating officer's hand and said: "You, sir, are the finest navigator afloat, and I shall report your splendid work to the department." And he kept his word; he wrote to the Navy Department about the excellent work of his navigator, which was the direct cause of rapid promotion.

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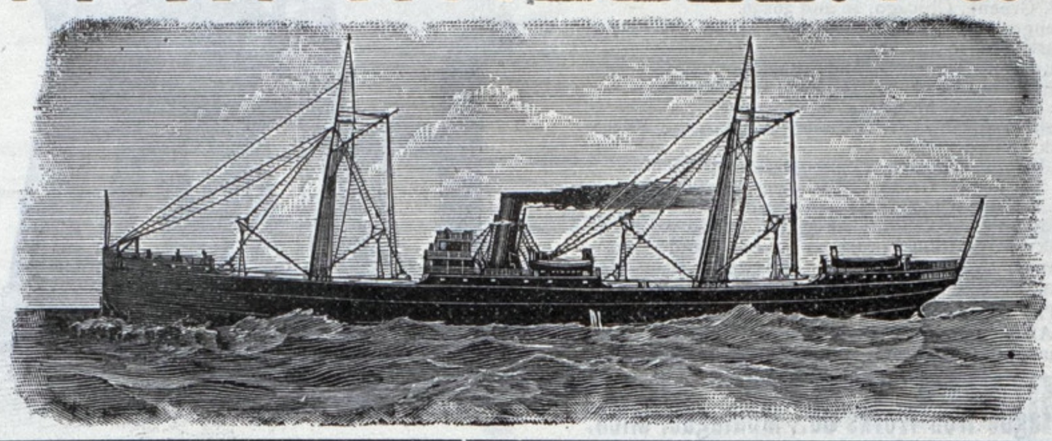

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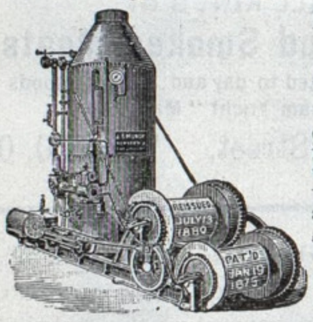

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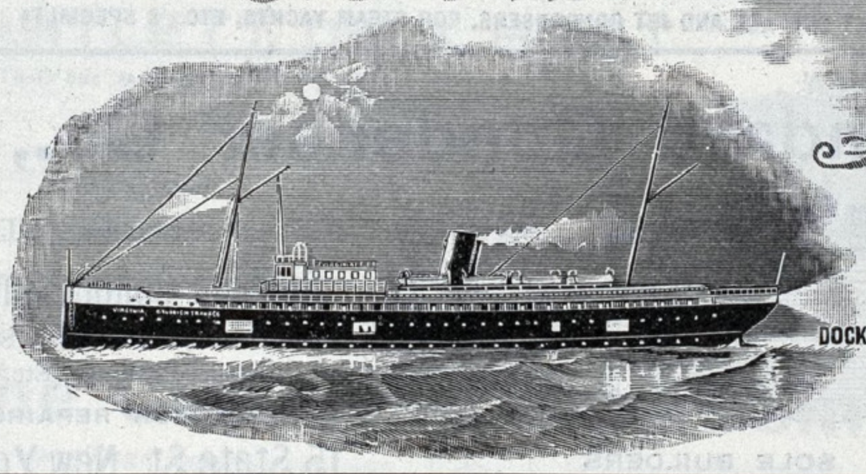

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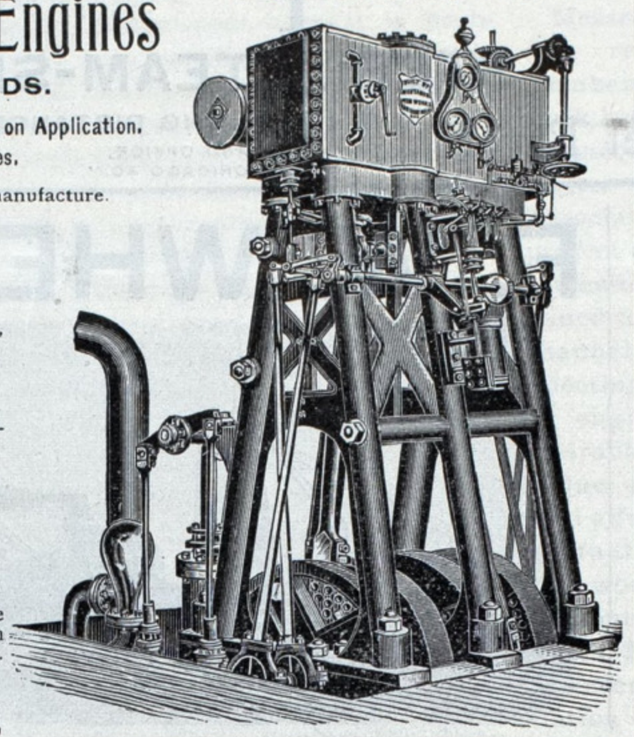

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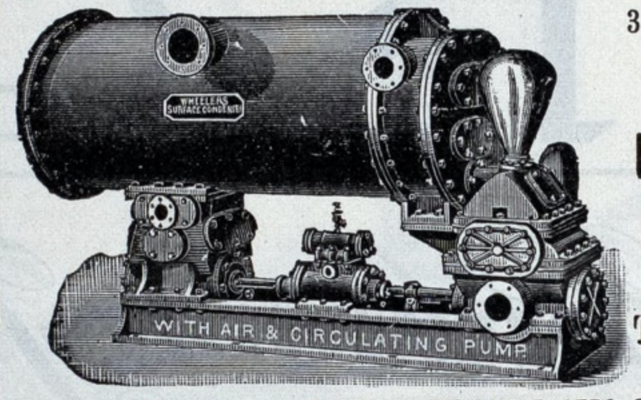


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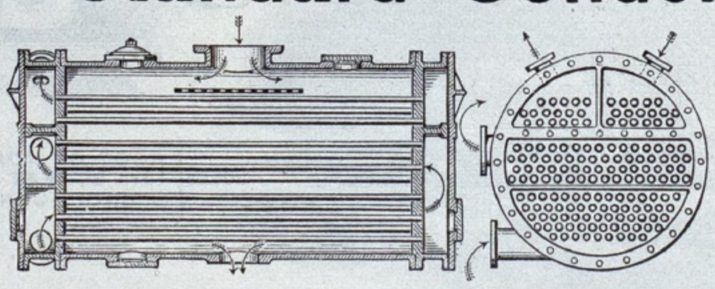

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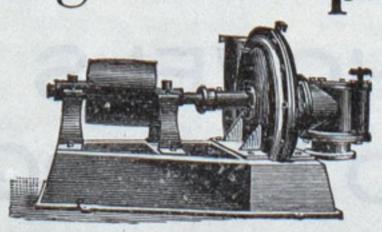

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### PROPOSALS.

U. S. ENGINEER OFFICE, 349 Carondelet St., New Orleans, La., September 28, 1894. Sealed proposals for extension of East Jetty and for dredging at Harbor of Sabine Pass, Tex., will be received here until 12 o'clock noon, October 29, 1894, and then publicly opened. Information furnished on application. JAMES B. QUINN, Major, Engineers. 40-43

U. S. ENGINEER OFFICE, 366 Milwaukee St., Milwaukee, Wis., October 1, 1894. Sealed proposals for: Green Bay Harbor, Wis., dredging 200,000 cubic yards; Kewaunee Harbor, Wis., pile pier extension 325 feet; Manitowoc Harbor, Wis., construction of breakwater 400 feet; Sheboygan Harbor, Wis., pile pier construction 900 feet, will be received here until 12 o'clock noon, November 1, 1894, and then publicly opened. All information furnished on application. JAMES F. GREGORY, Major, Engineers. 40-43

U. S. ENGINEER OFFICE, 366 Milwaukee St., Milwaukee, Wis., October 1, 1894. Sealed proposals for: Harbor of Refuge, Milwaukee, Wis., extending breakwater 300 feet; Racine Harbor, Wis., pier extension 150 feet; Kenosha Harbor, Wis., pier extension 150 feet; Waukegan Harbor, Ill., pile pier extension 240 feet, will be received here until 12 o'clock noon, November 6, 1894, and then publicly opened. All information furnished on application. JAMES F. GREGORY, Major, Engineers. 40-43

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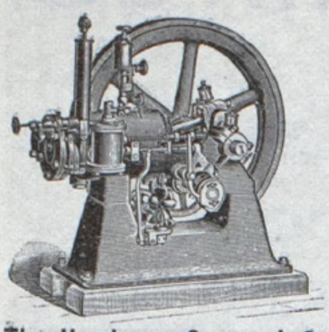

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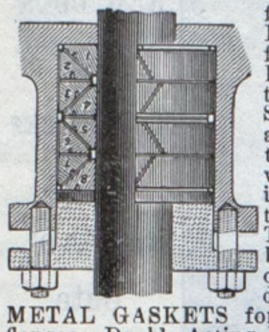

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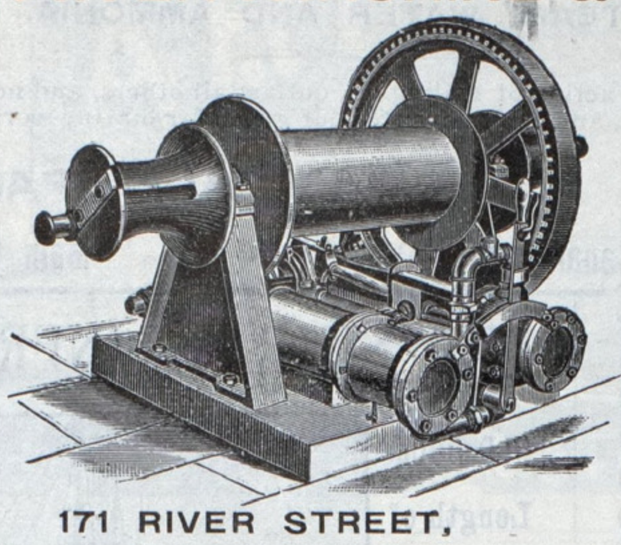

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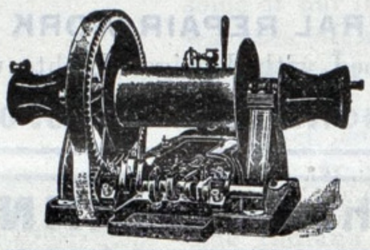

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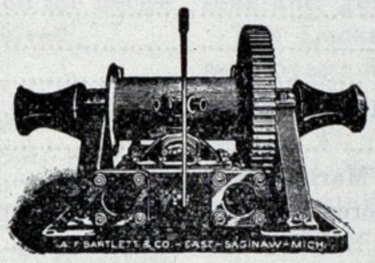


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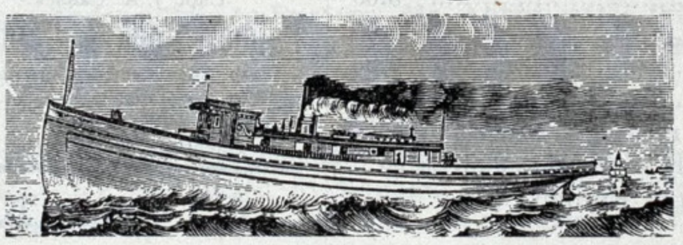

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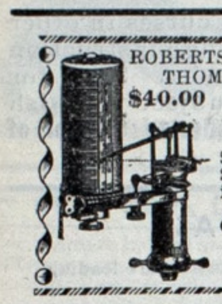


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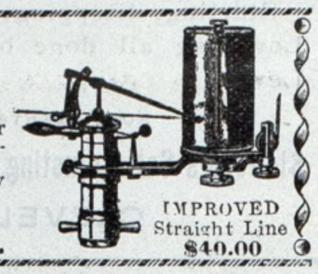

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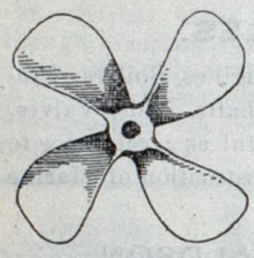

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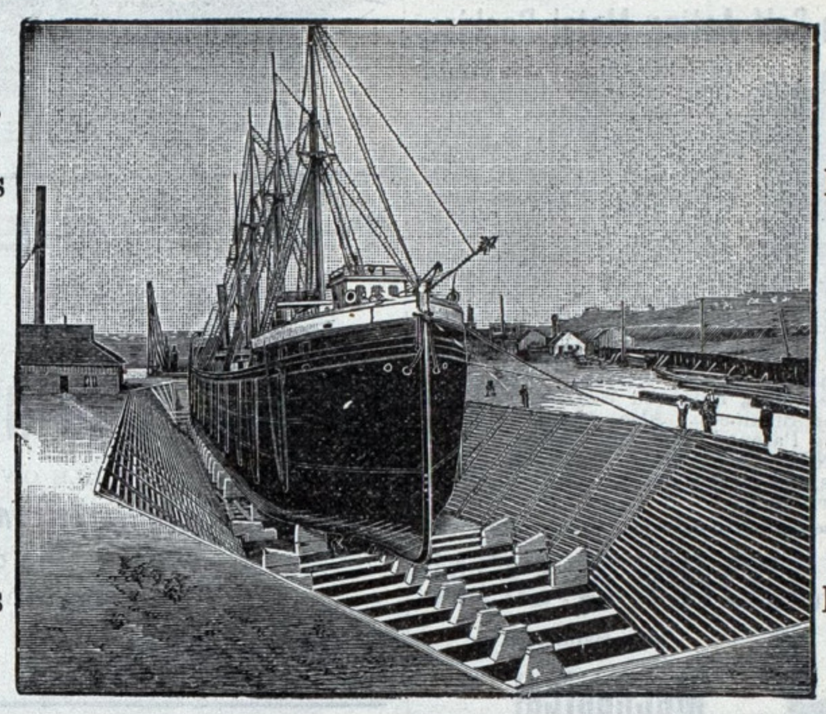
| Length of Keel Blocks |  | Length of Keel Blocks |
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